Small Business Innovation Research/Small Business Tech Transfer

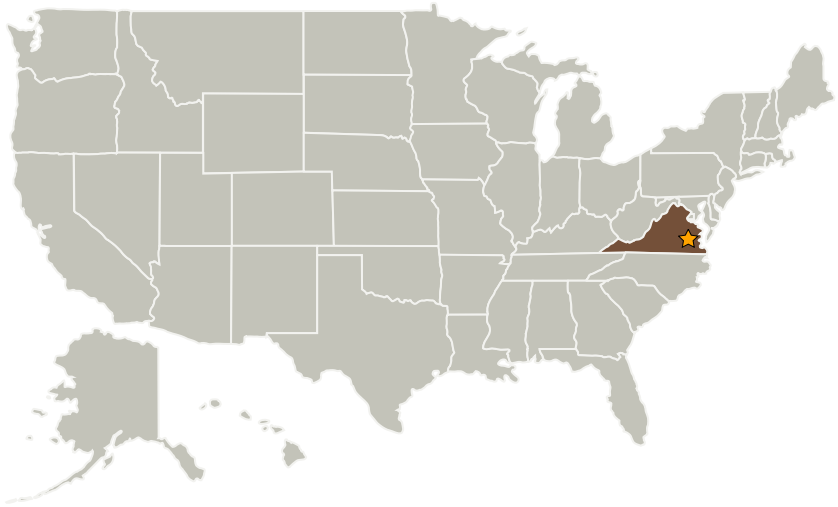
Multi-Disciplinary Multi-Fidelity Design Environment, Phase I

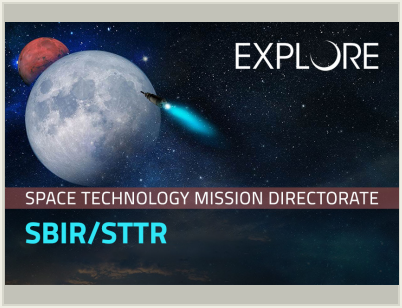
Completed Technology Project (2007 - 2007)

Project Introduction

Phoenix Integration will develop a collaborative simulation and design environment that will seamlessly integrate the people, data, and tools required for analyzing and designing complete vehicle systems. This next generation environment will help NASA to accurately assess and trade-off competing air vehicle concepts early in the design process. Working within the environment, geographically distributed team members will be able to easily construct large multi-disciplinary multi-fidelity system simulations from a custom library of reusable analysis components. A key feature of the environment will be "numerical zooming", i.e. the ability to incorporate numerical analyses of varying levels of fidelity in the simulation. Interfaces and tools will be provided that will allow users to configure the system simulation and securely execute it using heterogeneous computing resources. A simulation data library will allow users to share models, results, and conclusions with one another, and will serve as a searchable information repository. The expected results of the Phase I research will be a working prototype that will demonstrate key aspects of the proposed design environment. The Phase II program will result in a comprehensive framework environment that will help NASA achieve Fundamental Aeronautics Program goals for a broad range of air vehicles.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Phoenix Integration	Supporting Organization	Industry	Blacksburg, Virginia

Primary U.S. Work Locations
Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  - TX09.4 Vehicle Systems
    - TX09.4.5 Modeling and Simulation for EDL